

patent further provides that "[f]or imaging the object or target T, a controller processor 210 can be used to cause the telescope and scanner apparatus 60 to scan the outgoing beam 80 over the area of the target T to obtain multiple range data points, for example, in a raster pattern is conventional and well-known in radar and ladar imaging."

As indicated above and as recited in the claims, the present invention concerns a vehicle guidance sensor system including an integrated range measuring capability. It is respectfully submitted that the Phillips patent does not disclose a video guidance sensor. In this respect, it appears that the Examiner is reading the same components of the Phillips system as the video guidance sensor and the time of flight range measuring sub-system claimed in claim 1 and the other claims. Further, it is respectfully submitted that element 180 which is simply a beamsplitter 180 is not a "stationary tilted mirror" as contended by the Examiner. Similarly, it is not seen that waveform monitor 102 is "a first photodetector for directly receiving output light and for producing a corresponding output signal" nor that heterodyne detector 104 is "a second photodetector for receiving the returned light and producing a corresponding output signal" as contended by the Examiner. In this regard, not only does Phillips not disclose that the waveform monitor 102 and heterodyne detector 104 are photodetectors, the two devices receive the same input signals

Further, claim 1 recites a camera as well as first and second photodetectors and while the Clendenin patent discloses the provision of a videocon camera 22, there is nothing taught in either of the references which would lead to the proposed combination. The Examiner states that "it would have been obvious to modify Phillips to use a beamsplitter in the path of the returned light so as to incorporate the use of a video camera to image the scene that is being measured." However, Phillips already discloses a beamsplitter (180) and it is not clear how the video camera would be used in the Phillips system given the objects and purposes of that system. Moreover, Clendenin uses a gimbaled mirror and other optics to provide a separate signal to the television camera in contrast to the stationary tilted mirror employed in the video guidance system of the present invention as claimed.

The McCusker patent uses a GPS derived signal processing circuit and high speed light modulation to provide accurate time-of-flight range measurement. An

automatic gain control (AGC) 62 is used to automatically increase or decrease the light power output of the light emitter 16, as pointed out by the Examiner. However, it is not clear what amplifier to which the Examiner is referring in contending that it "would have been obvious to modify the amplifier used by Phillips to incorporate the use of an automatic gain control as taught by McCusker so as to ensure that the detectors are not being over saturated." Moreover, even assuming that the modification proposed here is an obvious one, the resultant hybrid combination would certainly not be that claimed in claim 1, given the numerous differences discussed above between the present invention as claimed and the teachings of the Phillips patent.

With respect to independent claim 15, this claim recites that a time of flight measuring sub-system is integrated into a video guidance system as defined in the claim, something that is not disclosed in Phillips or in the other references. Further, claim 15 recites that the system is "alternately operated in a range measuring mode and a video guidance sensor mode," a feature that, again, is not taught by the references and a feature that has not been addressed by the Examiner. Claim 15 also recites a camera for providing video images of the returned light as well as, in the range measuring sub-system, first and second matched photodetectors for receiving the output light and returned light, respectively. Further, claim 15 recites a digitizer, including both programmable gain amplifiers and analog to digital converters, for digitizing the output signals produced by the matched photodetectors. It is respectfully submitted that none of these features is disclosed by the Phillips patent nor are these features obvious from any combination of the teachings of the Phillips, Clendenin and McCusker references, even assuming, arguendo, that the combination proposed by the Examiner is valid one.

The dependent claims which have been rejected on prior art are patentable for at least the reasons set forth in support of the patentability of the claims parent thereto.

The provisional allowance of claims 6-11 and 18-22 is gratefully acknowledged but, for the reasons set forth above, it is respectfully submitted that claims 1 and 15 and the claims dependent thereon are also patentable over the prior art cited.

Allowance of the application in its present form is respectfully solicited.

Respectfully submitted,

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